

CLAIMS:

1. Apparatus for connecting a portable computer to a remote site for data communication therebetween comprising:

5 a LAN having a plurality of connection ports each for receiving connection to a portable computer for data communication between the LAN and the portable computer;

the LAN having a predetermined domain identifier for identification of computers connected to the LAN;

a communication computer;

10 the communication computer having a LAN connection connected to the LAN for communication of data between the LAN and the communication computer;

the communication computer having a network connection for connection to the remote site for communication of data between the communication
15 computer and the remote site;

the communication computer having designated IP address for use in communication with the remote site;

the communication computer being programmed to be responsive to messages using the predetermined domain identifier to receive a data transmission
20 transmitted from a respective one of a plurality of computers connected to the LAN, to communicate the data transmission to the remote site using the designated IP address, to receive response data from the remote site and to transmit the response data to the respective computer;

the communication computer being further programmed to be responsive to messages using a domain identifier different from the predetermined domain identifier from a portable computer alien to the LAN to receive a data transmission transmitted from the portable computer when connected to the LAN, to
5 communicate the data transmission to the remote site using the designated IP address, to receive response data from the remote site and to transmit the response data to the portable computer;

the communication computer being further programmed to be responsive to an ARP request message using a domain identifier different from the
10 predetermined domain identifier from a portable computer alien to the LAN, which ARP request message requests identification of the MAC-address of a component of the LAN, to respond providing the MAC-address of the communication computer.

2. The apparatus according to Claim 1 wherein, when the ARP request message from the portable computer is a request to identify a PROXY
15 server of the LAN, the communication computer is programmed to respond providing the MAC-address of the communication computer.

3. The apparatus according to Claim 1 wherein when the ARP request message from the portable computer is a DNS request which may be a PROXY request or a NON-PROXY request, the communication computer is
20 programmed:

- a) to receive and process the message,
- b) to attempt to make a determination if the request is a PROXY DNS request or a NON-PROXY request,

c) in the event that the request is determined to be a NON-PROXY DNS request, to transmit the message to a DNS server to obtain a DNS IP address,

d) in the event that the DNS server provides a valid IP address, to communicate to the portable computer the valid IP address,

5 e) in the event that the DNS server provides no valid address OR in the event that the request is determined to be a PROXY DNS request, to provide to the portable computer the MAC-address of the communication computer.

10 4. The apparatus according to claim 3 wherein the attempt to determine if the request is a PROXY DNS request or a NON-PROXY request is done by the presence of a dot in the http request.

5. The apparatus according to Claim 1 wherein the communication computer is further programmed, when transmitting the response data to the portable computer to maintain a table indicative of a port of the portable computer on which the response data is to be transmitted.

15 6. The apparatus according to Claim 1 wherein the communication computer is configured in an architecture to handle duplicate IP addresses from different clients which have similar TCP/IP parameters by creating a routing table that includes a MAC-address entry for each client and/or by isolating clients in separate subnets; or mapping them to an IP address pool including their MAC-
20 address.

7. The apparatus according to Claim 1 wherein, when the ARP request message from the portable computer is a request to identify a PRINTER server of the LAN, the communication computer is programmed to respond providing

the MAC-address of the communication computer and handle the printing job for the client by passing the printing job to a printer server within or by forwarding it to a printer server in the LAN and wherein the apparatus further provides printers in the client-side LAN that the client compute can utilize for printing as a standard service
5 with minimal configuration within the standard OS functions and drivers.

8. The apparatus according to Claim 1 wherein, when the ARP request message from the portable computer is a request to identify a EMAIL SEND server of the LAN, the communication computer is programmed to respond providing the MAC-address of the communication computer and handles the email as required
10 by forwarding the message to a LAN email-send program or to an email system within the apparatus.

9. The apparatus according to Claim 1 wherein, when the ARP request message from the portable computer is a request to identify a EMAIL RECEIVE server of the LAN, the communication computer is programmed to
15 respond providing the MAC-address of the communication computer and retrieves the required email from a remote email server outside any firewalls and presents all retrieved email to the client computer.

10. The apparatus according to Claim 1 wherein the communication computer is further programmed to be responsive to an ARP request message using
20 a domain identifier different from the predetermined domain identifier from a portable computer alien to the LAN, which ARP request message requests identification of the MAC-address of a DOMAIN NAME SERVER, , a GATEWAY SERVER, a

PROXY SERVER or an EMAIL SERVER or OTHER SERVICES of the LAN, to respond providing the MAC-address of the communication computer.

11. The apparatus according to Claim 1 wherein the communication computer includes for connection to the LAN a network card and a driver for the network card and is programmed with a series of levels of program including an Internet Protocol program, an Applications program and a Gateway/Proxy program, the Internet Protocol Program being arranged to process only messages directed to the LAN and wherein the communications computer is programmed:

a) to receive messages from the portable computer at the network card connected to the LAN,

b) to translate messages which are addressed to an address alien to the LAN so as to re-address the messages to be processed by the Internet Protocol program for communication to the Applications program,

c) to communicate with the re-addressed message the original alien address for re-connection to the message.

12. The apparatus according to Claim 11 wherein the communications computer is programmed:

a) to communicate the original alien address by generating a supplementary message for communication to the Internet Protocol program which includes the original alien address,

b) to recombine the re-addressed message with the supplementary message at the Applications program

c) to maintain a table identifying the portable computer and the alien address.

13. The apparatus according to Claim 11 wherein the communications computer is programmed:

5 a) to balance the load on the network by utilizing a redundant apparatus,

b) to forward requests from portable computers to systems within for processing or systems within the LAN.

10 14. The apparatus according to Claim 1 wherein the communications computer is programmed to:

a) protect packets from client computers from being seen by other client computers,

b) enabling VPNs services by handling CRC checksums and protocols.

15 15. The apparatus according to Claim 11 wherein the communications computer is programmed to:

a) protect packets from client computers from being seen by other client computers,

b) enabling VPNs services by handling CRC checksums and protocols.

20 16. The apparatus according to Claim 1 wherein the communication computer is further programmed:

a) to be responsive to the ARP request message using a domain identifier different from the predetermined domain identifier from the portable computer alien to the LAN to provide to the portable computer data defining a page

to be displayed on the portable computer, the page being arranged to require entry of a private "key" provided to the user of the portable computer only,

b) to receive the private "key" when entered,

c) to maintain a record correlating the key with the MAC-address

5 of the portable computer,

d) to generate a billing record indicative of times of usage of the

LAN by the portable computer identified by the recorded MAC-address.

17. The apparatus according to Claim 1 wherein the communication
computer is further programmed to be responsive to a web page request message
10 using a domain identifier different from the predetermined domain identifier from the
portable computer alien to the LAN to provide to the portable the requested web
page when obtained and to add to the web page so provided an "in-house" start web
page specified by the service provider and - generated or retrieved by the
communication computer.

15 18. Apparatus for connecting a portable computer to a LAN for
which the portable computer is not configured comprising:

a LAN having a plurality of connection ports each for receiving
connection to a portable computer for data communication between the LAN and the
portable computer;

20 the LAN having a predetermined domain identifier for identification of
computers connected to the LAN;

a communication computer;

the communication computer having a LAN connection connected to the LAN for communication of data between the LAN and the communication computer;

the communication computer being programmed to be responsive to
 5 messages using the predetermined domain identifier to receive a data transmission transmitted from a respective one of a plurality of computers connected to the LAN;

the communication computer being further programmed:

a) to be responsive to messages using a domain identifier different from the predetermined domain identifier from a portable computer alien to the LAN
 10 to provide to the portable computer data defining a page to be displayed on the portable computer, the page being arranged to require entry of a private "key" provided to the user of the portable computer only,

b) to receive the private "key" when entered,

c) to maintain a record correlating the key with the MAC-address
 15 of the portable computer,

d) to generate a billing record indicative of times of usage of the LAN by the portable computer identified by the recorded MAC-address.

19. Apparatus for connecting a portable computer to a LAN for which the portable computer is not configured comprising:

20 a LAN having a plurality of connection ports each for receiving connection to a portable computer for data communication between the LAN and the portable computer;

the LAN having a predetermined domain identifier for identification of computers connected to the LAN;

a communication computer;

the communication computer having a LAN connection connected to
5 the LAN for communication of data between the LAN and the communication computer;

the communication computer being programmed to be responsive to messages using the predetermined domain identifier to receive a data transmission transmitted from a respective one of a plurality of computers connected to the LAN;

10 the communication computer being further programmed:

a) to be responsive to a web page request message using a domain identifier different from the predetermined domain identifier from a portable computer alien to the LAN to provide to the portable the requested web page when obtained and to add to the web page so provided an "in-house" start web page
15 specified by the service provider and - generated or retrieved by the communication computer.